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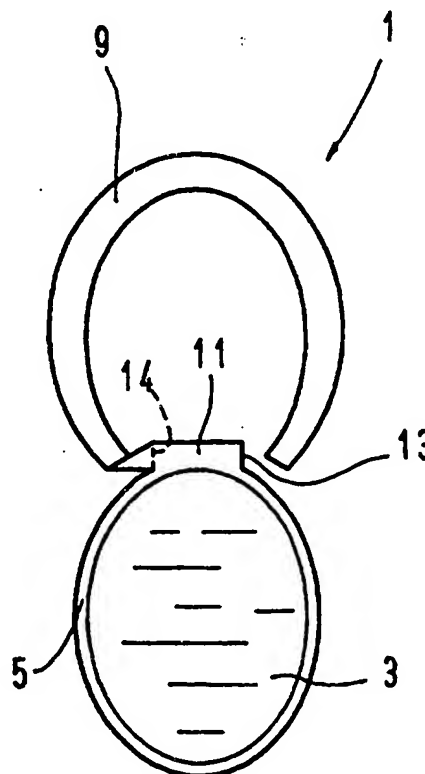
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<b>(21) International Application Number:</b> PCT/EP95/00669 <b>(22) International Filing Date:</b> 23 February 1995 (23.02.95) <b>(71) Applicant (for all designated States except US):</b> UNIFILL S.P.A. [IT/IT]; Via Viazza, 82, I-41030 S. Prospero Sulla Secchia (IT). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> BARTOLI, Andrea [IT/IT]; Via Victor Hugo, 23, Fraz. Canali, I-42100 Reggio Emilia (IT). TABARONI, Roberto [IT/IT]; Via Nicolò Dell'Arca, 43, I-40129 Bologna (IT). <b>(74) Agent:</b> GARDI, Giuliano; Gardipatent, Via Giardini, 605, I-41100 Modena (IT).	<b>(81) Designated States:</b> AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, MW, SD, SZ, UG), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>	

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**(54) Title:** A DISPOSABLE CONTAINER**(57) Abstract**

A disposable container (1, 2) is aimed at avoiding separate supports in general and at allowing positioning in a stable manner even on a flat surface; the container (1, 2) comprises two opposing elements (3, 6; 3a), at least one of which has a heat formed cavity, said opposing elements being joined together along a contact edge (5), preferably by heat and pressure sealing, the container (1, 2), in the zone peripherally external to the said edge (5), being provided with a peripheral annular crown (9) extending substantially along the entire length of the edge (5) itself, which can be rotated on a plastic hinge (11) that is part of the body of the container, so as to constitute, once it has been folded out, a hanging element or support strut.



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## A DISPOSABLE CONTAINER

The invention concerns a disposable container, that is a receptacle that can not be reused for liquid, solid or powdered products such as, for example, deodorants for small environments, in particular motor vehicles, cosmetic or personal hygiene products, edible sauces or other products besides; these containers being used, for example, for the distribution of free samples in cosmetics shops, or in public catering establishments such as canteens and restaurants, constituting single dose packages for oil, vinegar, or sauces in general.

The prior art includes small sized disposable containers consisting of a pair of shells having opposing concavities, heat welded along their edges; in general, a predetermined fracture line is provided for opening the container just the one time so as to evaporate, or in whichever way expel, the contents.

Alternatively, there are containers with just a single concave shell associated with a flat sealing sheet heat welded around the rim: the sheet can be made of, for example, a single layer of aluminium, or multiple layers, consisting of an external protective layer, for example in aluminium, removably attached to a more internal layer, made of a permeable material, to enable, once the protective layer has been removed, the gradual evaporation of the liquid inside dispersing the aromatic essences into the environment.

Moreover, such containers, after they have been filled with the relative product and sealed, are provided with a hook, or ring, support which enables them to be hung onto attachments in general: the support being made separately and inserted in an eye of the relative container after it has been formed.

However, the provision of said hook, or ring, support entails an unacceptable increase in costs, particularly as the final product can

only be assigned low prices, sometimes even being distributed free of charge.

The containers with pairs of opposing shells, preferably tapered in shape and which can be opened by cutting or tearing along a fracture line crossing the casing, have the further disadvantage that it is impossible to put them on a flat surface, such as, for example, the table of a restaurant, without spilling the residual contents.

Such prior art may be subject to considerable improvements with a view to eliminating the said drawbacks.

From the foregoing emerges the need to resolve the technical problem of inventing a disposable container that does not require to be provided with separate supports in general and which can be positioned in a stable manner even on a flat surface; all this in a simple and economic manner.

The invention resolves the said technical problem by adopting a container consisting of two opposing elements, at least one of which has a heat formed cavity, said opposing elements being joined together along a contact edge, preferably by heat and pressure sealing, the container, in the zone peripherally external to the said edge, being provided with a peripheral annular crown extending substantially along the entire length of the edge itself, which can be rotated on a plastic hinge that is part of the body of the container, so as to constitute, once it has been folded out, a hanging element or support strut.

The advantages offered by the invention are: significant simplification of the production cycle, achieved with the elimination of the onerous operation of inserting a separate support; the possibility of positioning opened containers which have not been completely emptied on a flat surface without spilling the residual contents; reduced costs, particularly due to the

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absence of separate suspending or supporting elements; improved use of the semi-finished item with a reduction in waste.

Some embodiments of the invention are illustrated, purely by way of example, in the three tables of drawings attached in which: Figure 1 is a front view of a container according to the invention, in a first embodiment with a single concave container shell and rear sealing sheet in multi-layer aluminium;

Figure 2 is a view from the left of Figure 1, with the protective layer of the said sheet partly removed;

Figure 3 is the rear view of Figure 1;

Figure 4 is a view as in Figure 3, but with the protective sheet removed;

Figure 5 is a front view of a container according to the invention, but in a second embodiment with a pair of opposing concave shells;

Figure 6 is a view from the left of Figure 5;

Figure 7 is a view as in Figure 1, but with the crown folded out 180° so as to constitute a suspension ring;

Figure 8 is a view as in Figure 7, but with interrupted crown so as to constitute a suspension hook;

Figure 9 is a side view of the container in Figure 5, but with the crown folded out backwards by about 60° so as to constitute a support strut;

Figure 10 is a front view of a further embodiment of a container according to the invention, in which the crown is partly detached from the edge of the container so that it can be used either as a ring support and as a hook support;

Figure 11 is a view such as that of Figure 10, showing the supporting element folded out 180° to constitute a suspension hook;

Figure 12 is a view from the left of Figure 11;

Figure 13 is an enlarged detailed interrupted longitudinal section XIII-XIII of Figure 11;

Figure 14 is an enlarged detailed cross-section through XIV-XIV in Figure 11.

Figure 1 to 4, 7, 8 and 10 to 14 show a container 1 according to the invention with a single concave shell 3.

Figures 5, 6, and 9 show a container 2 according to the invention with a pair of opposing shells 3a.

Both the single concave element, or shell, 3 making up the container 1 and each of the shells 3a of the container 2 is provided with a cavity, obtained by heat forming, for containing the product 4, for example, liquid, and associated, by heat and pressure welding along an edge 5 with a rear closing sheet 6 consisting of a protective layer 7, for example, in aluminium, attached removably to a more internal permeable layer 8, intended to come into contact with the liquid 4 and which enables it to evaporate into the environment.

A peripheral crown 9 external to the edge 5 is removably joined to it by means of a predetermined fracture line 10, continuous or dashed, for example, obtained by non-perforating punching, or by die-cutting the filled and sealed container: the crown 9 extending along a substantial part of the extent of the edge 5 and forms, in correspondence with an interrupted portion of said fracture line 10, a plastic hinge 11. Said plastic hinge 11 is integral with a part of the edge 5 projecting radially outwards beyond the predetermined fracture line 10 in a zone of said crown 9 where the predetermined fracture line 10 is interrupted.

A first incision 12 delimits the opening section, either by cutting or tearing, of the container 2: the first incision 12 being preferably located close to the plastic hinge 11 so that the opening is above the said hinge so the container suspended or supported.

A radial extension 13 (Figure 8) of the predetermined fracture line 10 is preferably arranged in the vicinity of the hinge 11 in order to open out the crown 9 into a hook shape once it has been folded

out approximately 180°.

The hinge 11 is laterally delimited in the vicinity of the extremities of the predetermined fracture line 10 by a pair of ideal lines 14.

As shown in Figure 10, the peripheral crown 9 may be connected to the edge 5 of a container 1, 2 only at its opposing ends, i. e. the crown 9 may be spaced apart from the edge 5 along a substantial portion of its length, so that a space 15 is defined between the crown 9 and the edge 5; said space being wide enough to allow the crown 9 to act as a portion of a suspension ring when the container 1, 2 is to be suspended.

One of said opposing ends is connected to said plastic hinge 11, preferably located on one side of the container 1, 2, the other end of the crown 9 being detachably connected to the edge 5 by means of a predetermined fracture line 10a.

The edge 5 is also provided with a notch 16, preferably located close to the hinge 11 at the side of said hinge opposite to the side which is connected to the crown 9, so that, when the other end of the crown 9 is detached from the edge 5 along the predetermined fracture line 10a, said crown can be rotated around the hinge 11 and an intermediate portion 17 (Figure 13) of it may be made pass through the notch 16 in order to allow a fixed positioning of the crown 9 with respect to the container 1, 2, if the crown is to be used as a suspension hook.

The edge 5 may be provided with a portion 18 having an increased width, in which an incision 19 passing substantially through the whole thickness of the edge 5 is provided; when it is desired to separate the protective layer 7 from the permeable layer 8, the portion 18 is hold by the user and bent backward so that the layer 7 is taken away.

The incision 19 defines a portion 20 of the edge 5 removable from

the portion 18 having an increased width: said incision 19 may be made so that said predetermined fracture line 10a is included in said removable portion 20, or, as indicated with reference 19a, so that said predetermined fracture line 10a is excluded from said removable portion 20.

The containers according to the invention can be obtained by heat and pressure welding along any profile, subsequently it can be heat formed with the injection of air in a heated die through an opening in the edge which has not been heat welded so as to obtain pairs of opposing hollow shells 3a, or a single hollow element 3 associated with a corresponding rear closing peelable sheet 6, finally the container may be filled with powdered or liquid material through the non-welded openings, sealed and finally punched to define the crown 9.

In use, once the protective layer 7 has been removed, even only partially, or once the container has been opened along the incision 12, the crown is made to open out rotating on the plastic hinge 11 through a suitable angle, for example close to 60° in the case the crown has to perform the function of a support strut, or by approximately half a revolution in the case it is to be used as a ring or hook.

In practice the materials, dimensions and details of execution may be different from, but technically equivalent to those described without departing from the juridical domain of the present invention.

It is to be noted that the edge 5 can have whichever shape, be it regular or irregular geometric or patterned; the same holds for the external profile of the crown 9 and for the predetermined fracture line 10.



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## CLAIMS

1. A disposable container (1; 2), comprising two opposing elements (3, 6; 3a) joined together along an edge (5), at least one of said elements (3; 3a) having a cavity, characterised in that a peripheral crown (9) is provided for in a zone external to the edge (5), said crown (9) forming a plastic hinge (11) in a predetermined portion of said edge (5), said crown (9) being rotatable around said plastic hinge (11).
2. A container according to claim 1, wherein the crown (9) is removably joined to the edge (5) by means of a predetermined fracture line (10; 10a).
3. A container according to claim 2, wherein said predetermined fracture line (10) is interrupted in correspondence with said plastic hinge (11).
4. A container according to claim 2, wherein one end of the crown (9) is removably connected to said edge (5) by means of a predetermined fracture line (10a; 13).
5. A container according to claim 1, or 2, or 4, wherein the crown (9) is spaced apart from the edge (5) along a substantial portion of its length, so that a space (15) is defined between the crown (9) and the edge (5).
6. A container according to any one of the preceding claims, wherein the plastic hinge (11) consists of an extension outwards of the edge (5).
7. A container according to any one of the preceding claims, wherein the element (3) having a cavity is coupled along said edge (5) with a closing and sealing sheet (6, 7, 8).
8. A container, according to claim 7, wherein the closing and sealing sheet (6, 7, 8) is made up of a permeable layer (8),

anchored to said edge (5) and removably associated with a more external protective layer (7).

9. A container according to any one of claims 1 to 6, wherein it comprises a pair of shells (3) with opposing concavities, having a first incision (12) across the container (2) to open it.

10.A container according to any one of the preceding claims, wherein said edge (5) is provided with a notch (16), preferably located close to the hinge (11) at the side of said hinge opposite to the side which is connected to the crown (9).

11.A container according to any one of the preceding claims, wherein the edge (5) is provided with a portion (18) having an increased width, in which an incision (19) passing substantially through the whole thickness of the edge (5) is provided; said incision defining a removable portion (20) of the edge (5).

12.A container according to claim 11, wherein said incision (19) is made so that said predetermined fracture line (10a) is included in said removable portion (20).

13.A container according to claim 11, wherein said incision (19a) is made so that said predetermined fracture line (10a) is excluded from said removable portion (20).

14.A container according to any one of the preceding claims, wherein said crown (9) has the shape of a ring.

15.A container according to any one of claims 1 to 12, wherein said crown (9) has the shape of a hook.

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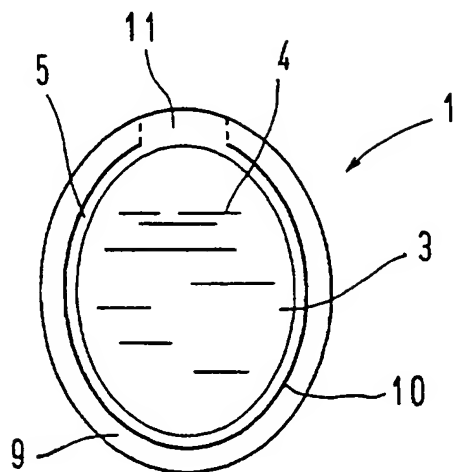


Fig. 1

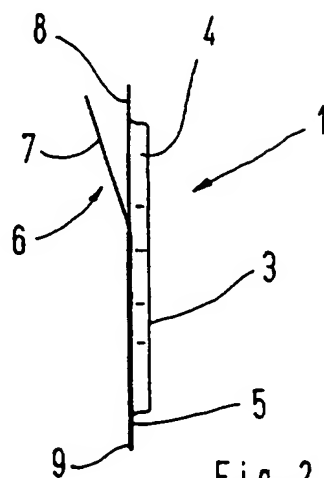


Fig. 2

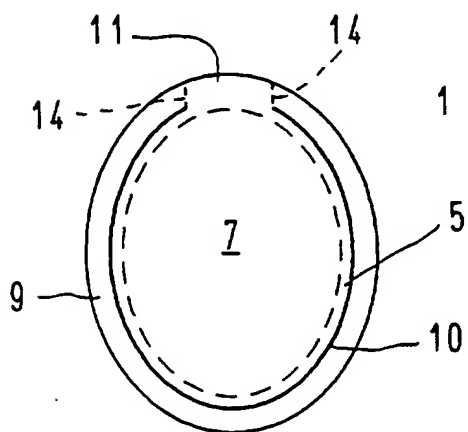


Fig. 3

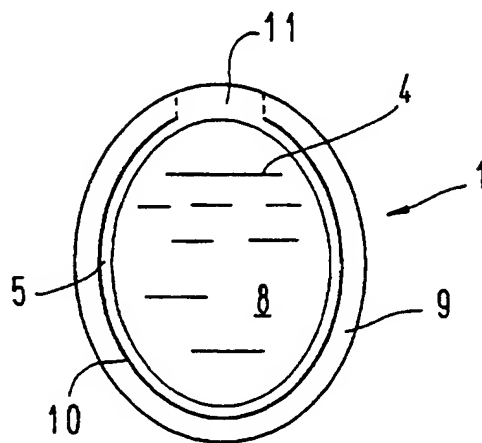


Fig. 4

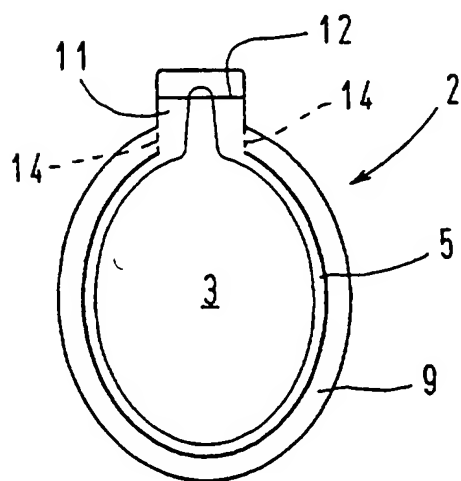


Fig. 5

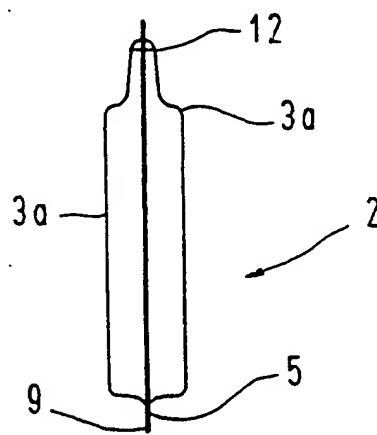


Fig. 6

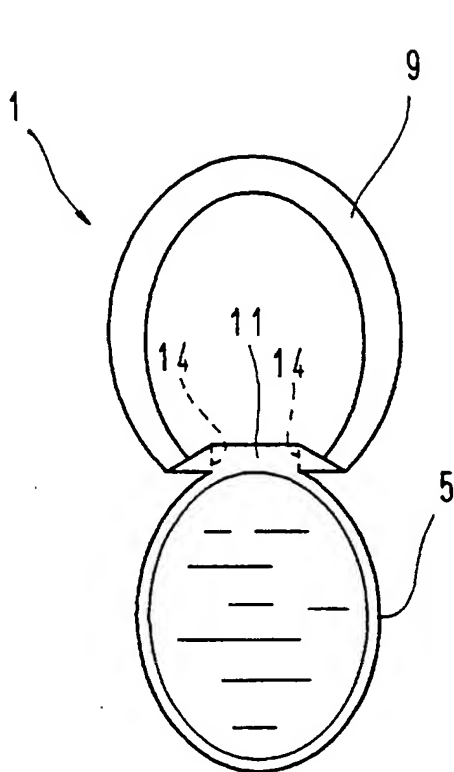


Fig. 7

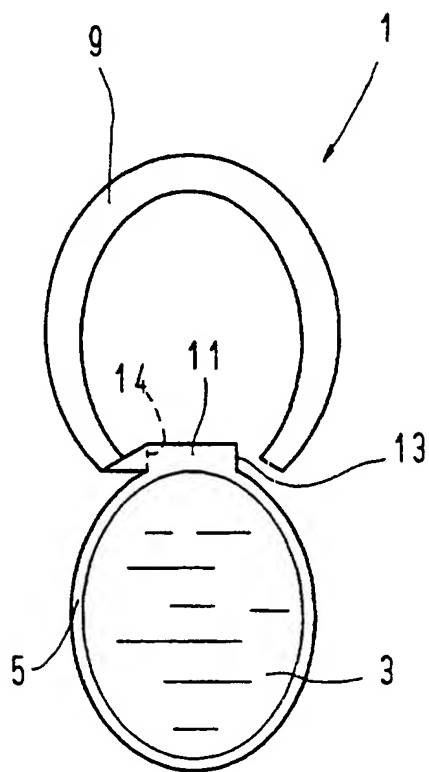


Fig. 8

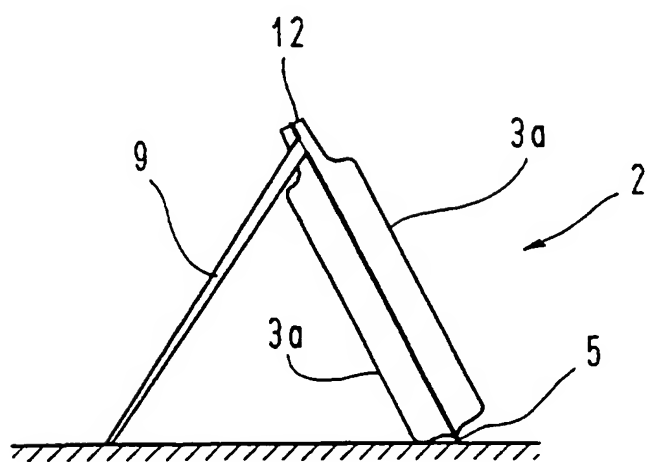
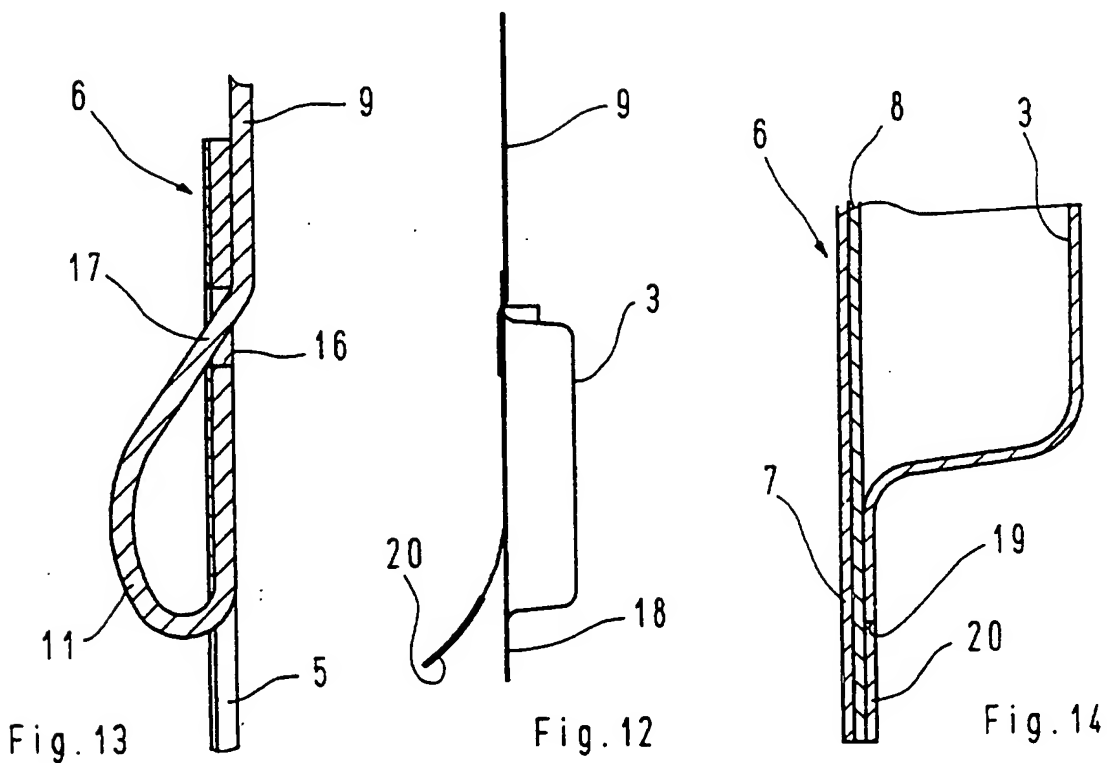
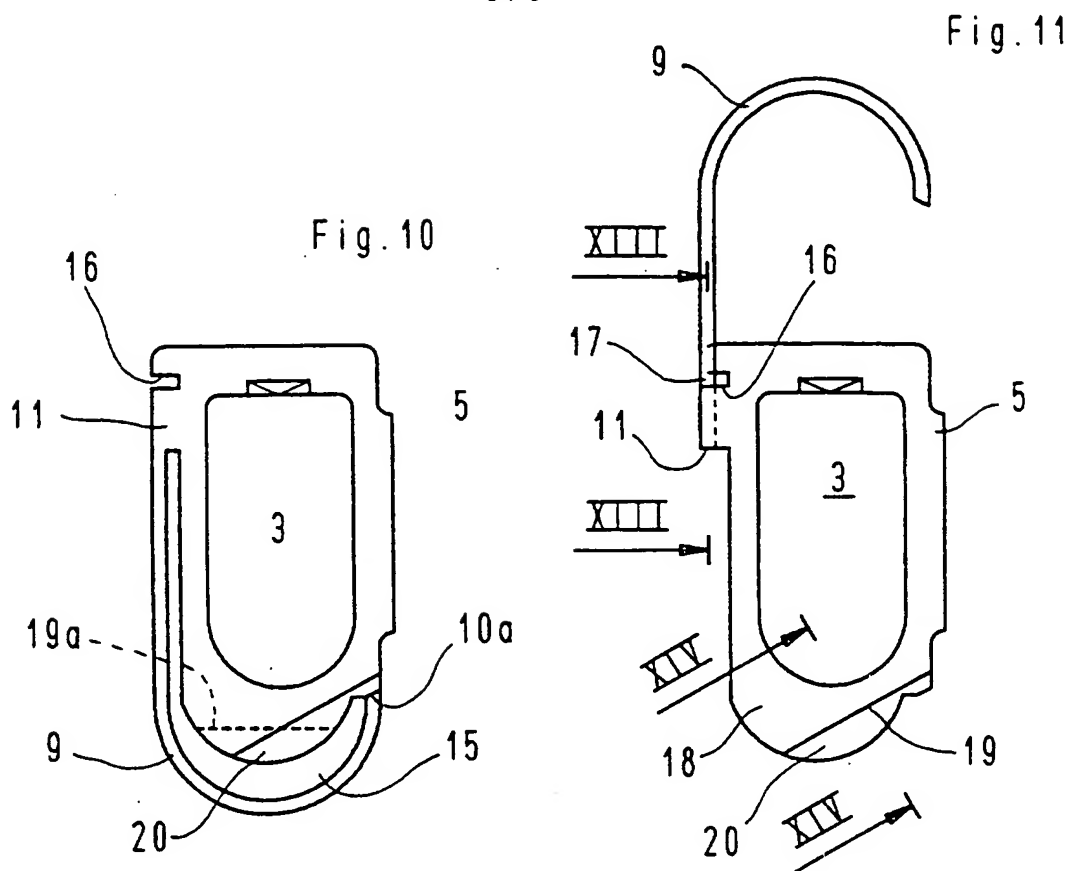


Fig. 9

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## INTERNATIONAL SEARCH REPORT

Internat'l Application No  
PCT/EP 95/00669

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 B65D75/56 B65D75/32

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,3 108 708 (BETNER) 29 October 1963 see column 1, line 66 - column 3, line 30; figures 1-4 ---	1-4,6,8, 14
A	US,A,3 127 010 (CAPEZZUTO) 31 March 1964 see column 1, line 64 - column 2, line 49; figures 1-5 ---	1
A	DE,U,90 02 522 (GUTERMAN) 13 June 1990 see page 4, line 19 - page 5, line 22; figures 1,2 -----	1



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